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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/797,483

03/11/2004

Tetsuji Suzuki

26046

3294

20529

7590

01/03/2006

NATH & ASSOCIATES

112 South West Street

Alexandria, VA 22314

EXAMINER

SEVER, ANDREW T

ART UNIT

PAPER NUMBER

2851

DATE MAILED: 01/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/797,483	SUZUKI ET AL.	
	Examiner	Art Unit	
	Andrew T. Sever	2851	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 October 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) 1-4,9 and 10 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 5-8 and 11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 October 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Claims 1-4, 9, and 10 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 7/11/2005.

Drawings

2. The drawings were received on 10/20/2005. These drawings are acceptable.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out

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the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 5-6 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirata et al. (US 6,783,242 as cited in the non-final rejection mailed on 7/22/2005) in view of Kurtz et al. (US 2005/0128392.)

Hirata teaches in figures 1 and 10 an image displaying apparatus comprising:

A light source (36) for emitting a beam containing at least three primary colors (inherent in that there are 3 light valves R, G, and B, there must be three primary colors (Red, Green, and Blue));

First to third reflective spatial light modulators (2B, 2G, and 2R) corresponding to the three primary colors, respectively;

A color separating optical (9) system for separating the beam emitted from the light source into three primary color beams and guiding the three primary color beams toward the first to third reflective spatial light modulators through first to third steering mirrors (7), respectively;

First to third reflective polarizing plates (1B, 1G, 1R; they are specified as polarizing beam splitters in column 10 lines 21-31) for polarizing and separating the corresponding primary color beam guided by the color separating optical system into a linearly polarized beam of a first polarized state, transmitting and injecting the linearly polarized beam of the first polarized state into the corresponding reflective spatial light modulator, polarizing and separating a modulated-and-reflected beam from the

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corresponding reflective spatial light modulator into a linearly polarized beam of a second polarized state, and reflecting the linearly polarized beam of the second polarized state;

A color combining optical system (10) for combining the three primary color beams modulated by the reflective spatial light modulators and reflected by the reflective polarizing plates into a composite beam; and

An image forming optical unit (20) for receiving the composite beam and forming an image according to the received composite beam.

Hirata does not teach that the first to third reflective polarizing plates are wire grid type reflective polarizing plates. Kurtz teaches in paragraph 9 that conventional glass polarization beam-splitters, such as those that Hirata probably has, exhibit many problems such as limited angular response, manufacturing quality problems, thermal stress related aberration, among other limitations. Kurtz teaches in paragraph 13 that many of these problems are overcome by using wire grid type polarizers or polarizer beam-splitters instead of the prior art prism, as wire grid polarization devices exhibit relatively high extinction ratios, high efficiencies, broader angular acceptance, and better thermal performance. Given all the advantages taught by Kurtz for using a wire grid polarization device; it would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the standard polarization prism of Hirata with a wire grid polarizer as taught by Kurtz.

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With regards to applicant's claim 6:

See figure 2 of Hirata, the first mirror is the mirror next to the lines 9w and 9b and the second is the other mirror.

With regards to applicant's claim 8:

See above. The steering mirrors are parts 7, where in the mirror that is not seen in figure 12 receives a beam orthogonal to the direction of the other two.

6. Claims 7 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirata in view of Kurtz as applied to claims 5-8 above, and further in view of Furuata et al. (US 6,540,360.)

As described in more detail above Hirata in view of Kurtz teaches among other things a image displaying apparatus having a cross dichroic prism and three reflective spatial light modulates that are attached to it. Although it is obvious that some sort of planar substrate is present, Hirata in view of Kurtz does not necessarily specifically teach it, especially not that it is made of a material whose thermal expansion coefficient is equalized or approximated to that of the three-color combining cross dichroic prism as claimed in applicant's claim 11. Such a teaching is provided by Furuata, which teaches a dust protection member 7R and first and second frames plates (81 and 82), which correspond, to the claimed planar substrate. Furuata teaches in column 17 lines 19-27 that the thermal expansion coefficient is chosen such that it is approximately that of the three-color combining cross dichroic prism (Furuata teaches that the materials are chosen to

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be closer than that of common materials used for the purpose. This meets the claimed language of approximately.) Furuata further teaches that by using similar thermal expansion coefficient materials; heat deformation is less likely to cause image shift. Accordingly it would have been obvious to one of ordinary skill in the art at the time the invention was made to use materials having similar thermal expansion coefficients in the substrate of Hirata in view of Kurtz.

Response to Arguments

7. Applicant's arguments with respect to claims 5-8 and 11 have been considered but are moot in view of the new ground(s) of rejection.

Applicant has added the limitation that the polarizing plates must be wire grid type. As shown above this is a common form of polarizing plate that is frequently used in polarization beam splitters such as that taught by Hirata. With regards to applicant's claims 7 and 11, the new reference Furuata has been added to reject claim 11, since it was noted that in the previous office action claim 7 states the substrate is inherent; since the grounds of rejection have been changed with regards to the independent claim to a 35 USC §103 rejection, the specific rejection of claim 7 has been moved to the 35 USC § 103 rejection based on Hirata in view of Kurtz and Furuata as Furuata shows evidence of what was stated to be inherent in the non-final rejection of 7/22/2005 (See MPEP 21144.03 (with regards to making if final specifically section D)). Accordingly since the

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grounds of rejection have been changed to reflect applicant's amendments and/or reflect factual basis for a taking of official notice, they have been made final.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew T. Sever whose telephone number is 571-272-2128. The examiner can normally be reached on 8:30-5:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on 571-272-2258. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "W B Perkey", with a long horizontal stroke extending to the right.

AS

William Perkey
Primary Examiner